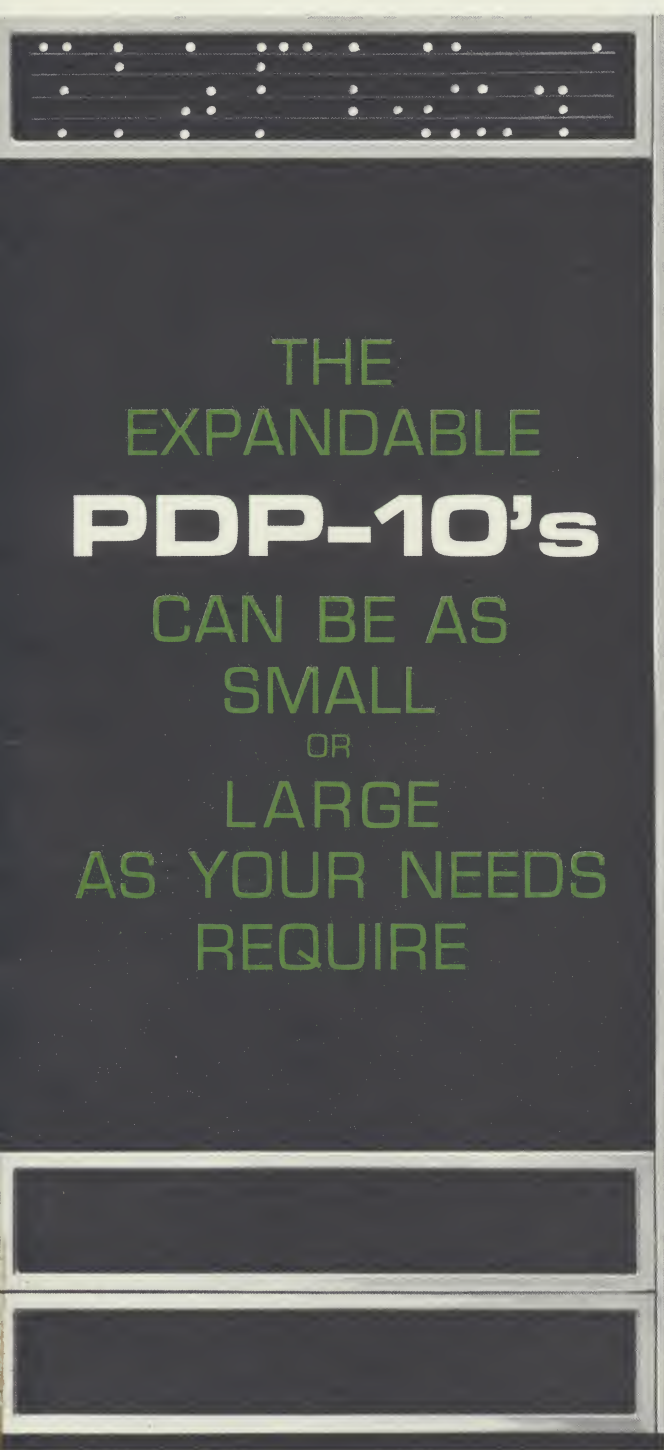




THE
EXPANDABLE
PDP-10's
CAN BE AS
SMALL
OR
LARGE
AS YOUR NEEDS
REQUIRE

INTRODUCING THE EXPANDABLE **PDP-10**

digital PDP-10/10

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

digital PDP-10/20

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

digital PDP-10/30

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

digital PDP-10/40

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

digital PDP-10/50

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

PDP-10 HARDWARE CHARACTERISTICS

GENERAL

General purpose, stored program, binary digital computer
Parallel processing
Asynchronous operation
36 bit word
16 general purpose registers
High speed multiplexor channels
Programmed-priority interrupt system
7 fully-nested interrupt levels
Flexible I/O bus structure
Easily interfaced to special devices
Executive and user modes of operation
Functional operator console
High-reliability Flip-Chip logic

PROCESSOR

16 accumulators
15 index registers
Multilevel indirect addressing with indexing
Floating point hardware to 8 decimal digits
Immediate mode addressing of operands
64 programmed operators
Highly symmetric, logically complete order code
365 powerful instructions
Easy to learn, modular mnemonics
Data Manipulation by:
 36 bit word, half word, double word
 Bytes of *any* size (automatic sequential access)
 Memory blocks of *any* size
Typical Arithmetic Instruction times:
 Move to accumulator – 1.9 μ sec
 Fixed point 36 bit add – 2.1 μ sec

*Instruction times assume one instruction fetch and one operand fetch from overlapped 1.0 μ sec core memories and includes Fast Accumulators.
Floating point times are based upon average data.

Fixed point 72 bit multiply – 9.1 μ sec
Floating point add – 5.1 μ sec
Floating point multiply – 8.8 μ sec
Jump – 1.0 μ sec

All 16 Boolean operations, each in four modes
8 arithmetic comparison instructions, in eight modes
16 bit test/modify instructions, in four modes
Four kinds of subroutine call and return instructions
Push Down Stack Operations for:
 Data manipulation
 Inter-program transfer
 Re-entrant code
6 Arithmetic flags facilitate double precision
Programmable Trapping upon:
 Operator selected memory reference conditions
 Real time increment elapse
 Five distinguishable arithmetic overflow conditions
 Non-existent or illegal memory reference
 Push down list overflow
 Memory parity error
 Power failure detection

STORAGE

262,144 directly addressable 36 bit words
1.0 microsecond memory cycle time
Asynchronous operation with respect to processors
Nanosecond access times
Automatic parity checking
Memory protection
Dynamic program relocation
Memory Bus Structure permitting:
 Multiprocessing
 Memory modules of different speeds
 Program/data overlap
 Interleaving on low order bit(s)

16 instant access registers permit high speed:

- Indexing
- Accumulator fetch and store
- Program execution

PDP-10 SOFTWARE CHARACTERISTICS

FIVE COMPLETE SOFTWARE SYSTEMS

All systems achieve total modularity through dynamic core utilization and complete device independence.

All are truly upward compatible at both source and relocatable binary levels.

All expand gracefully to any hardware configuration.

All perform identical buffered input-output overlapped with computation for all devices.

Monitors 10/10, 10/20 & 10/30: Single-user monitors for 8K paper tape, 8K DECtape and larger systems respectively.

- I/O Controller
- Run time selection of I/O devices
- Job-to-job transition
- Job save and restore features
- Memory dumps
- System builder permitting creation of custom tailored monitor and I/O systems.

Monitor 10/40: Field tested and proven multiprogramming time sharing system with powerful command structure incorporating all of the features of monitor 10/30 with concurrent real time processing, batch processing, and time sharing.

Monitor 10/50: Full range disc swapping multiprogramming time sharing system incorporating all of the features of monitor 10/40 with greatly extended capacity.

Complete utility software including:

- FORTRAN IV – ASA standard single pass compiler with highly optimized object code fully exploiting PDP-10's powerful instruction set.
- MACRO ASSEMBLER – Flexible assembly language with sophisticated macro facilities and many special data generating, conditional assembly, listing and control pseudo-operations.
- TECO – Powerful context editor with sophisticated macro facilities, and iterative string search, match, and substitution operations.
- DDT – Famous on line symbolic debugging aid with more than 50 commands, permitting dynamic interaction with running programs.
- LINKING LOADER – Loads and links independently assemble or compiled relocatable or absolute binary programs. Twenty special options including automatic library search and chaining facilities.
- PERIPHERAL INTERCHANGE – Transfers alphanumeric or binary data from or to any I/O device with optional editing, sequencing, merging, and syntax checking features.
- FORTRAN IV OPERATING SYSTEM – More than 100 library routines including double precision and complex functions. Dump and chain facilities. Dynamic assignment of I/O devices.
- MANY OTHERS – Including a LISP interpreter, a powerful desk calculator with macro facilities, and a library editing and updating system.



SALES AND SERVICE

MAIN OFFICE AND PLANT

146 Main Street, Maynard, Massachusetts 01754
Telephone: From Metropolitan Boston: 646-8600
Elsewhere: AC617-897-8821
TWX: 710-347-0212 Cable: Digital Mayn. Telex: 920456

DOMESTIC

NORTHEASTERN

NORTHEAST OFFICE:

146 Main Street, Maynard, Massachusetts 01754
Telephone: (617)-646-8600 TWX: 710-347-0212

BOSTON OFFICE:

899 Main Street, Cambridge, Massachusetts 02142
Telephone: (617)-491-6130 TWX: 710-320-0468

ROCHESTER OFFICE:

455 Empire Boulevard, Rochester, New York 14609
Telephone: (716)-482-2310 TWX: 510-253-3078

CONNECTICUT OFFICE:

129 College Street, New Haven, Connecticut 06510
Telephone: (203)-777-5797 TWX: 710-465-0692

MID-ATLANTIC

NEW YORK OFFICE:

1259 Route 46, Parsippany, New Jersey 07054
Telephone: (201)-335-3300 or (212)-279-4735
TWX: 510-235-8319

PHILADELPHIA OFFICE:

Southampton Medical & Professional Bldg.
Second Street Pike, Southampton, Pa. 18966
Telephone: (215)-357-9450 (9451) TWX: 510-667-1724

WASHINGTON OFFICE:

Executive Building
7100 Baltimore Ave., College Park, Maryland 20740
Telephone: (301)-779-1100 TWX: 710-826-9662

SOUTHERN

HUNTSVILLE OFFICE:

Suite 41 — Holiday Office Center
3322 Memorial Parkway S.W., Huntsville, Ala. 35801
Telephone: (205)-881-7730 TWX: 510-579-2122

HOUSTON OFFICE:

3417 Milam Street, Suite A, Houston, Texas 77002
Telephone: (713)-523-2529 TWX: 910-881-1651

MIDWEST

PITTSBURGH OFFICE:

300 Seco Road, Monroeville, Pennsylvania 15146
Telephone: (412)-351-0700 TWX: 710-797-3657

CHICAGO OFFICE:

910 North Busse Highway, Park Ridge, Illinois 60068
Telephone: (312)-825-6626 TWX: 910-253-0342

ANN ARBOR OFFICE:

3853 Research Park Drive, Ann Arbor, Michigan 48104
Telephone: (313)-761-1150 TWX: 810-223-6053

WESTERN

LOS ANGELES OFFICE:

801 E. Ball Road, Anaheim, California 92805
Telephone: (714)-776-6932 or (213)-625-7669
TWX: 910-591-1189

SAN FRANCISCO OFFICE:

2450 Hanover Street, Palo Alto, California 94304
Telephone: (415)-326-5640 TWX: 910-373-1266

SEATTLE OFFICE:

McAusland Building, 10210 N.E. 8th Street
Bellevue, Washington 98004
Telephone: (206)-454-4058 TWX: 910-443-2306

DENVER OFFICE:

Suite 205 —
5200 South Quebec Way, Englewood, Col. 80110
Telephone: (303)-771-1180 TWX: 910-931-2562

INTERNATIONAL

CANADA

Digital Equipment of Canada, Ltd.
150 Rosamond Street, Carleton Place, Ontario, Canada
Telephone: (613)-257-2615 Telex: 013-442

Digital Equipment of Canada, Ltd.
39 Dundas Road East, Cooksville, Ontario, Canada
Telephone: (416)-279-1690 Telex: 022-9665

GERMANY

Digital Equipment GmbH
5 Koeln, Neue Weyerstr. 10, West Germany
Telephone: 23 55 01 Telex: 888 2269
Telegram: Flip Chip Koeln
Digital Equipment GmbH
8 Muenchen, Theresienstr. 29, West Germany
Telephone: 29 94 07 and 29 25 66 Telex: 841 24226
Telegram: Digital Muenchen

ENGLAND

Digital Equipment Corp. (U.K.) Ltd.
3 Arkwright Road, Reading, Berkshire, England
Telephone: Reading 57231 Telex: 851-84327
Digital Equipment Corporation (UK) Ltd.
The Precinct
46 Bolton Road, Walkden, Manchester, England
Telephone: Walkden 5660

FRANCE

Equipement Digital
65 Rue du Faubourg St. Honore, Paris 8^e, France
Telephone: 256-1137, 256-1328 Telex: 842-26705

AUSTRALIA

Digital Equipment Australia Pty. Ltd.
89 Berry Street
North Sydney, New South Wales, Australia
Telephone: 92-0919 Telex: 790AA-20740
Cable: Digital, Sydney

Digital Equipment Australia Pty. Ltd.
36 Outram Street
West Perth, Western Australia
Telephone: 214-993

JAPAN

Rikei Trading Co., Ltd.
Kozato Kaikan Bldg.
No. 18-14, Nishishimbashi 1-chome
Minto-ku, Tokyo, Japan
Telephone: 5915246 Telex: 7814208

SWEDEN

Telare AB
Box #49025, Stockholm 49, Sweden
Telephone: 24-88-30 Telex: 854-10178

INTRODUCING THE EXPANDABLE PDP-10

digital PDP-10/10

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

digital PDP-10/20

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

digital PDP-10/30

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

digital PDP-10/40

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

digital PDP-10/50

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

The

Start with PDP-10/20 which includes
8K of core memory, 2 DEC Tapes
and:

- Monitor 10/20
- Fortran IV Compiler
- Macro Assembler
- Context Editor
- Symbolic Debugging Program
- I/O Controller
- Peripheral Interchange Program
- Desk Calculator
- Library Programs



10's



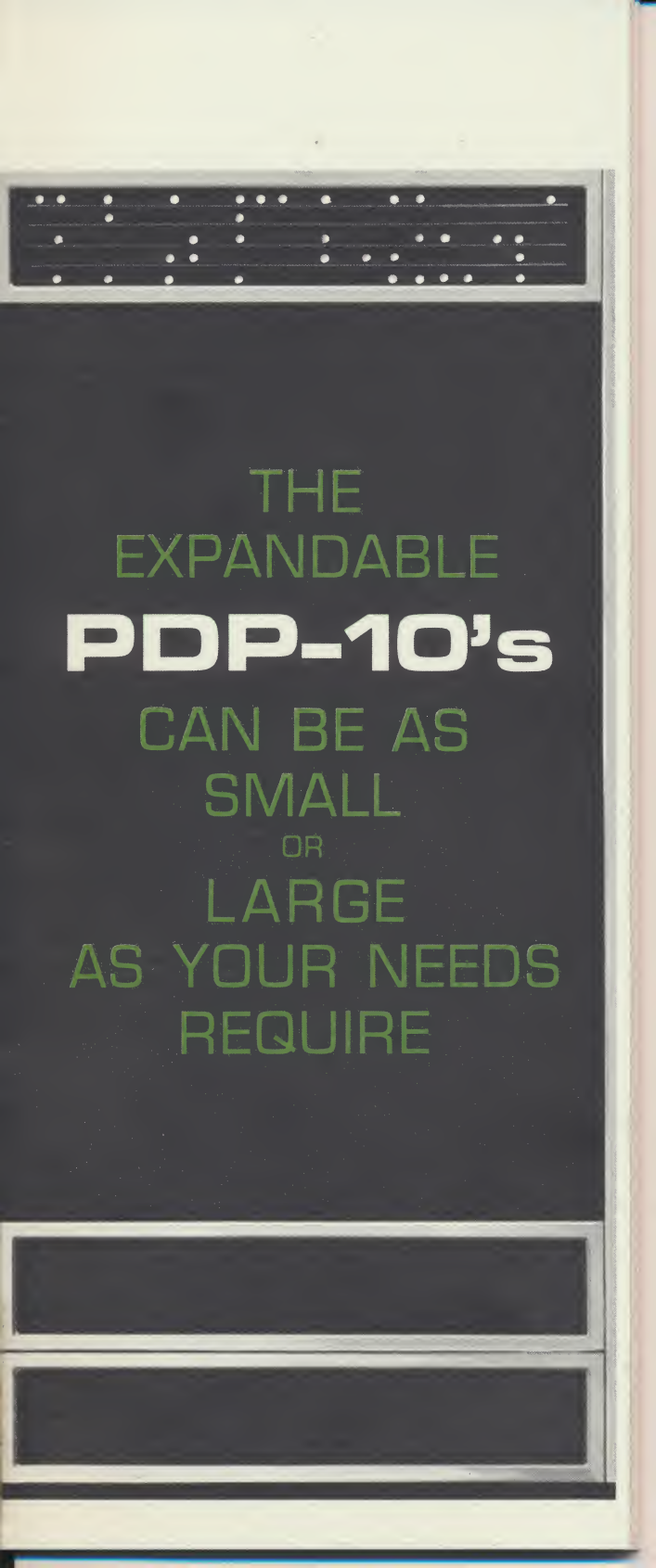
Add our Disc-File,
Magnetic Tapes
and a Selector
Channel,
plug in 16K
more core
memory,



and you
have our
PDP-10/50
Multiprogramming/
Swapping
Time-Sharing System.



If you want to multi-
process then add one of
our other computers
such as PDP-8. This
controls teletypes and
services specialized I/O
such as A-D converters,
displays, etc.

A photograph of a PDP-10 computer system. At the top is a dark horizontal panel with a grid of small, light-colored circular indicators. Below this is a large, dark rectangular area containing text. At the bottom are two horizontal slots, likely for tape drives or other peripherals.

THE
EXPANDABLE
PDP-10's
CAN BE AS
SMALL
OR
LARGE
AS YOUR NEEDS
REQUIRE